

Work Order ID 123972

123972

Page 1

September-04-14 11:55:38 AM

Item ID: D6009-129 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Material
 Start Date: 9/04/14 Start Qty: 20.00 ***20*** Cust Item ID:
 Required Date: 3/30/15 Req'd Qty: 20.00 ***20*** *23X* Customer:
 Reference:

Approvals: Process Plan: MLS Date: 14-09-04 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6009	Rev A								

100 PURCHASING 0.00

100

Purchasing

Purchasing

Memo

Issue P/O: 25798

- a) Order as per Dwg D6009
- b) Material: 3.500 x 0.625 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube
- c) Minimum ultimate tensile strength = 77 ksi
- d) Minimum tensile yield strength = 66 ksi
- e) Tolerance are per ASTM B210 (see details on Dwg D6009)
- f) Material certification required

EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

CL 14/09/16 20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:33%;"> Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ </td> <td style="width:33%;"> Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ </td> <td style="width:33%;"> Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ </td> <td style="width:33%;"> Engineering ☐ Quality ☐ Other ☐ </td> </tr> </table>	Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other _____ _____ _____
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Page 2

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 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Receive & Insp for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
120	QC Inspect dimensions to drawing	0.00							
120									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6009								
140	Identify as per dwg & Stock Location: SHED	0.00							
140									
Packaging	Memo outside container	0.00							
Packaging									

23x SP 15-05-16

(23) 15-05-14 DAS 9 9-89 9-89 9-89

(23) 15-05-14 DAS 9 9-89

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Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Page 3

September-04-14 11:55:38 AM

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.00							
Quality Control									

MLJ MAY 19 2015

MLJ MAY 19 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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FAULT CATEGORY

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Picklist Print

September-04-14 11:55:42 AM

Page 1

Work Order ID: 123972

123972

Parent Item: D6009-129

D6009-129

Parent Item Name: Crosstube Material

Start Date: 9/04/14

Required Date: 3/30/15

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A01.08.17New IssueSM
alodine DD 10.01.09 verified by:JLM

IPP Rev:B remove

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6009-129P

Purchased

No

110

Each

20.0000

1

D6009-129P

Crosstube Material

**

Location

Loc Qty

Loc Code

HALL

20

107865

20

20-23x
SP 15-05-6

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

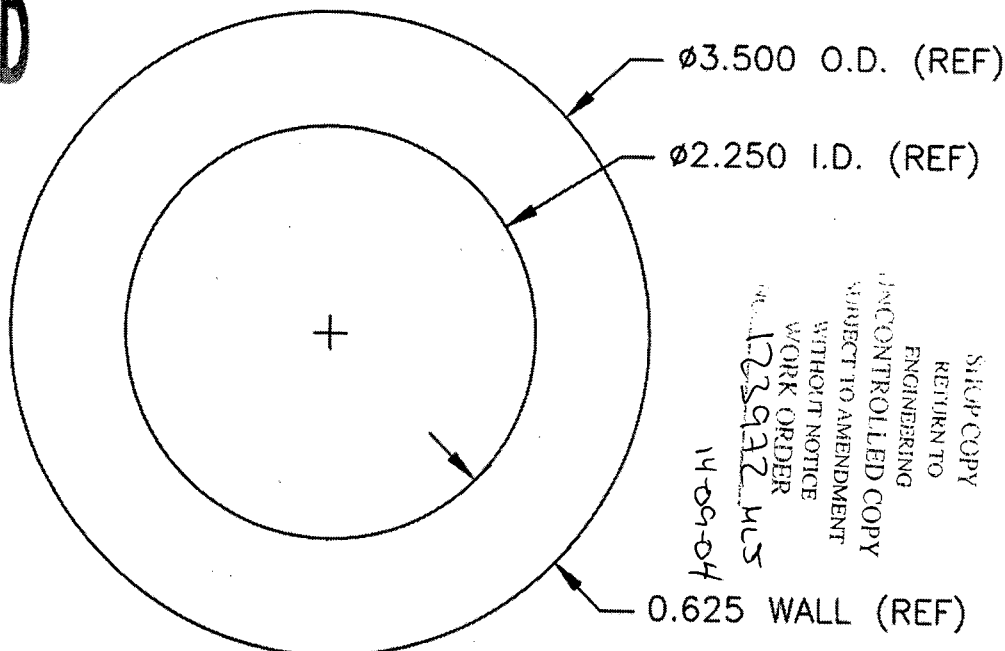
Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
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DESIGN #	DRAWN BY RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6009	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
01.08.17 #



NOTES

- 1) D6009-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 129" LONG TUBE: D6009-129

- 2) MATERIAL: 3.500 OD x 0.625 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.063 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.188/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO25798**

Purchase Order Date 9/16/2014

PO Print Date 9/23/2014

Page Number 1 of 5

Order From :

VU-ALU001

ALUMINIUMWERK UNNA AG
630 3033 SOUTH PARKER RD
AURORA, CO 80014
USA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED \$

Contact Name

Vendor Phone 303 755 5672

Ship To Contact

Ship To Phone

Ship Via: Contract Shipping

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Wire

Currency

USD

FOB

DDP - (Delivered Duty Paid)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D6005-128P EXTRUDE AS PER DWG D6008-128 REV. B B123963	Crosstube Material	3/30/2015 Yes 3/30/2015		28.00 Each	\$523.00	\$14,644.00
						Line Total:	\$14,644.00
2	D6006-129P EXTRUDE AS PER DWG D6006-129 REV. A B123967	Crosstube Material	3/30/2015 Yes 3/30/2015		20.00 Each	\$1,002.00	\$20,040.00
						Line Total:	\$20,040.00
3	D6009-129P ✓ EXTRUDE AS PER DWG D6009-129 REV. A B123972	Crosstube Material	3/30/2015 Yes 3/30/2015		20.00 Each	\$1,254.00	\$25,080.00

Rec'd 23X

SP 15-05-6.

Note:

9/23/2014

Packinglist ALUnna AG

ALUnna ref. no.	54642/300
Customer PO.	PO. 25798
Date:	04.08.15

Boxmarking:

Dart Aerospace PO. 25798
D 6009-129 Made in Germany
Dest. Hawkesbury Ont., Canada

We hereby declare that the wooden packing material are totally free from bark and apparently

free from live plant pests

[illegible]

Sp 15-05-6

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: Dart Aerospace Ltd.
Client:

1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 75/15

Cert No.: / No. du certificat:

Bestellnummer:

Order No. / No. de commande

Auftrag:

54642/300

Our Reference/Notre Reference:

Produkt:

Rohre nahtlos gepresst

Product / Produit:

Tubes seamless extruded

Spezifikation:

AMS - QQ - A - 200/11; -

Specification:

Werkstoff:

7075

Zustand:

T 6511

Alloy/Alliage:

Temper/État

Abmessung

3,500 INCH x 2,250 INCH x 0,625 INCH x 129,000 INCH

Size / Dimension

D6009-129

Kennzeichnung

ALUnna - Cert No. 75/15 - 7075 - T 6511 - Cast No. 85338 - AMS - QQ-A - 200/11 - 3.500" OD X 0.625" Wall - Heat Lot No.

Marking/Marquage:

1303935 - ALUnna Order Conf. No. 54642/300-1- PO. 25798

Lieferung

Delivered Material / Matériel délivre:

pcs.

lbs

23

8075054702

Country of Manufacture: Germany

Products are in accordance with applicable RoHS

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Na
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
85338	0,07	0,13	1,41	0,06	2,39	0,19	5,75	0,03	0,01				0,0003

Hydrogen content: 0,10

ccm/100 g Al Elements without indication < 0,01 %

country of melt manufacturer: Germany

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
	81,0	72,0	7,0			
1	84,390	76,560	11,0			1303935
2	85,550	78,155	10,0			

RMS: outside 25 - max. 11,0 µ"

Ergebnis der Prüfungen:

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

mergardtri



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2009

valid until 2016-11-10

Cert. - Reg. No.: 001959 QM08; 001959 ASH 09-1



ALUnna

Abnahmebeauftragter

23.01.2015

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Aluminiumwerk Unna AG · Uelzener Weg 36 · D-59425 Unna

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ONT, K6A1K7
Kanada

Aluminiumwerk Unna AG

Uelzener Weg 36 · D-59425 Unna

Postfach 11 46 · D-59401

fon +49 (0) 23 03-206 - 0

fax +49 (0) 23 03-206- 116

info@alunnatubes.com

www.alunnatubes.com

page: 1

date: 9.04.2015

customer 40980

delivery note

87280

your PO dated: 16.09.2014
your PO No.: PO25798
confirmation No.: 54642

contact: Petra Eisenblätter
Tel.: +(303) 755 5672
Fax: +(303) 755 5936
representative: CLAUS J. BETTER

CARRIER: Senator International ~~See~~ your VAT No.:

AWU VAT No.: DE177869055

Country of origin: Germany

We supply acc. to our delivery terms and conditions:

item	quantity	unit	net kgs
------	----------	------	---------

100	24,000	PC	
-----	--------	----	--

AWU article: 36744 / Tariff no. 76082081

Customer article: D6005-128 2.750 X 0.375 X 128 / cust. drwg.

product: Tubes / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11(A)

outer diameter: 2,750 INCH Tol. +0,012 -0,012

tol.for mean OD +0,006 -0,006

inner diameter: 2,000 INCH

wall thickness: 0,375 INCH Tol. +0,038 -0,038

fixed length 128,000 INCH Tol. +0,125

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS max.: outer 25

tol. on quantity +10 % -10 % / scurfed

2.750" OD 0.375" Wall, 128" lengths

Part Number D6005-128 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210 / your drawing D6005

Tubes protected with corrosion protective oil

Tubes line marked

Commerzbank AG, Unna

Konto-Nr. 102 56 00 · BLZ 443 400 37

BIC/S.W.I.F.T. - Code: COBADE FF 443

IBAN: DE 90 4434 0037 01025600 00

Sitz der Gesellschaft: Unna

Amtsgericht Hamm, HRB 3045

Vorstand: Thomas Wiese

Vorsitzende des Aufsichtsrats: Irene Wiese

ARTIKELKONNEX

- Allgemeine Lieferungs- und Zahlungsbedingungen - (nur kaufmännischer Verkehr)

1. Vertrags- und Kaufvertragsinhalt

15. Sonstige Bestimmungen

16. Ausschreibung und Angebot

2. Preis

11. Zahlungsbedingungen

3. Produkt und Verpackung

4. Abnahme

5. Liefergarantie

6. Kaufmännische

7. Haftung für Schäden

12. Schlussbestimmungen

10. Eigentumsvorbehalt

delivery note

87280

page: 2
date: 9.04.2015
customer: 40980

Packing: seaworthy wooden cases
number of packages: 1
number of pieces: 24

item	quantity	unit	net kgs
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200	18,000	PC	
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AWU article: 35311 / Tariff no. 76082081

Customer article: D6006-129 3.250 X 0.515 X 129 / cust. drwg.

product: Tubes / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11(A)

outer diameter:	3,250 INCH Tol.	+0,016	-0,016
inner diameter:	2,220 INCH		
wall thickness:	0,515 INCH Tol.	+0,052	-0,052
fixed length	129,000 INCH Tol.	+0,188	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS max.: outer 25

tol. on quantity +10 % -10 % / scurfed

3.250" OD 0.515" Wall, 129" lengths

Part Number D6006-129 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210 / drawing D6006

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases
number of packages: 1
number of pieces: 18

item	quantity	unit	net kgs
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300 ✓	23,000	PC	
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SP15-05-6

AWU article: 37272 / Tariff no. 76082081

Customer article: D6009-129 3.500 X 0.625 X 129 / cust. drwg.

product: Tubes / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11(A)

outer diameter:	3,500 INCH Tol.	+0,016	-0,016
tol. for mean OD		+0,008	-0,008
inner diameter:	2,250 INCH		
wall thickness:	0,625 INCH Tol.	+0,063	-0,063
fixed length	129,000 INCH Tol.	+0,188	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,01 INCH / 1 FEET / RMS max.: outer 25

tol. on quantity +10 % -10 % / scurfed

3.500" OD 0.625" Wall, 129" lengths

Part Number D6009-129 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases
number of packages: 1

- Allgemeine Lieferungs- und Zahlungsbedingungen - (nur kaufmännischer Verkehr)

1. Vertragsschluss und Vertragsinhalt

1.1 Der Vertrag wird durch die Bestellung des Kunden und die Bestätigung des Lieferanten geschlossen. Der Vertrag ist schriftlich zu bestätigen. Die Bestätigung ist binnen 14 Tagen nach Eingang der Bestellung zu erfolgen. Ist keine Bestätigung erfolgt, so ist der Vertrag als nicht geschlossen anzusehen.

2. Lieferanten und Dritte

3. Liefer- und Zahlungsbedingungen

2.9.2

3. Preisen und Mengen

4. Abrechnung

5. Zahlungsbedingungen

9. Kreditgrundlage

8. Haftung und Mängel

12. Schlussbestimmungen

10. Eigentumsverbehalt

delivery note**87280**

page: 3
date: 9.04.2015
customer 40980

number of pieces: 23

Terms of payment: 30 days after date of delivery
terms of delivery: DDP (Delivered, Duty, Paid)

weight: gross 1986,000 net 1650,000

Packstücke 3

customer address:

DART AEROSPACE LTD.
1270 Aberdeen Street
HAWKESBURY ON K6A 1K7
Kanada

ANMANN & CO. AG

- Allgemeine Lieferungs- und Zahlungsbedingungen - (nur kaufmännischer Verkehr)

1. Vertragsgegenstand: ...

2. Preis und Zahlungsbedingungen

3. ...

4. ...

5. ...

6. ...

7. ...

8. ...

9. ...

10. ...

11. ...

12. ...